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U.S. EPA Region III
Central Regional Laboratory
Environmental Services Division
Annapolis, Maryland

ANALYTICAL REPORT

BOARHEAD FARMS

SUPERFUND REMOVAL/REMEDIAL Acct # TFA03N9Y2
Lab Request No. REQ94128

November 03, 1994

?

Where is Data From

U.S. EPA Region III
Central Regional Laboratory
Annapolis, Maryland

November 03, 1994

ANALYTICAL RESULTS: BOARHEAD FARMS [REQ94128]

Dear Harry Harbold,

Enclosed is our analytical report for the above case. It is organized into several sections: Analytical Request and Sample Descriptions, Organic, Inorganic, and Microbiological Results. All data were reviewed by a peer and a laboratory manager.

Analytical Request and Sample Descriptions: (General)
Each laboratory assigned number, station, description, matrix, sample date and locational data is reported. A table summarizes the tests assigned to each sample. A glossary and qualifier code definition is provided.

Inorganic Results:
For requests assigned inorganic tests, results are grouped by service group, e.g., Metals. Sample results are reported; non-detects are provided with the actual quantitation limit. Method description and quality control protocols are described in analyst narratives.

Organic Results:
For the requested organic tests, results are grouped by service group, e.g., Volatile Organic Compounds. Only detected analytes are reported. Nominal Quantitation Limit (NQL) tables are provided for each service group. Specific information for the calculation of Actual Quantitation Limits (AQL) achieved for a given sample is included. Quality control values are provided in summary tables with acceptance criteria. Method description and quality control protocols are described in analyst narratives.

Microbiological Results:
For requests assigned microbiological tests, sample results and quality control values are incorporated into a single table. Method description and quality control protocols are described in analyst narratives.

If you have any questions, please call Rick Dreisch, Laboratory Branch Chief, (410) 573-2646, or Skip Weisberg, Organic Section Chief, (410) 573-2681 or Khin Cho Thaung, Inorganic Section Chief, (410) 573-2680.

Approval for Release:

Frederick Dreisch, Chief (3ES20)
Laboratory Branch

Quality Assurance Review:

Peggy Zawodny, (3ES20)
Quality Control Officer

cc: Mitch Bormack (CH2M HILL)

AR305278

Facility: BOARHEAD FARMS
Program: SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ94128
Account #: TFA03N9Y2

SAMPLE DESCRIPTIONS

Sample #	Station, Description	Matrix	Type	End Collection Date	Time	Latitude	Longitude
94091529	STA RT, RECTANGULAR TANK	Water - Type Unspecified	GRAB	09/14/94	07:30		
94091530	STA CT, CYLINDRICAL TANK	Water - Type Unspecified	GRAB	09/14/94	07:45		
94091531	STA CT-DUP, CYLINDRICAL TANK-DUPLICATE	Water - Type Unspecified	GRAB	09/14/94	08:00		
94091532	STA TB, TRIP BLANK	Water - Type Unspecified	GRAB	09/14/94	08:10		

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Central Regional Laboratory
Annapolis, Maryland

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Facility: BOARHEAD FARMS
Program: SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ94128
Account #: TFA03N9Y2

TESTS REQUESTED
(X = Test was Requested)

Inorganic Tests Assigned:	Sample No. 940915-														
	29	30	31	32											
Mercury by Semi-Automated Cold Vapor Technique	X	X	X												
Metals Analysis	X	X	X												
Total Cyanide	X	X	X												

Organic Tests Assigned:	Sample No. 940915-														
	29	30	31	32											
PCBs and Pesticides by Gas Chromatography	X	X	X												
Semivolatile Organics by GC/MS	X	X	X												
Volatile Organic Compounds by Purge and Trap GC/MS	X	X	X	X											

QUALIFIER CODE AND GLOSSARY DEFINITIONS

Qualifier Codes:

< =	Sample value is below the quantitation limit. Quantitation limit reported.
</= =	Reported value is estimated. Sample was analyzed in duplicate, one value is equal to or above the quantitation limit and one below. Average of quantitation limit and detected value reported.
A =	Quality control value is outside acceptance limits.
B =	Not detected substantially above (10 times) the level reported in the laboratory or field blanks (includes field, trip, rinsate, and equipment blanks).
C =	See report narrative for analyst's observations concerning this result.
D =	Sample and duplicate values are below the quantitation limit. Quantitation limit reported.
E =	Value exceeds a theoretically equivalent or greater value (e.g. dissolved > total, orthophosphate > total phosphorus). However, the difference is within the expected precision of the analytical techniques and is not statistically significant.
I =	An interference exists which masks true response. See report narrative for explanation.
J =	Analyte present. Reported value is estimated; concentration is below the level for accurate quantitation.
K =	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L =	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N =	Presumptive evidence indicates the presence of the compound. Special methods and/or method modifications may be needed to confirm its presence or absence in future sampling efforts.
NA =	Analysis was not requested.
Q =	No analytical results. See report narrative for explanation.
R =	Unreliable results. Analyte may or may not be present in the sample. Supporting data is necessary to confirm results.
T =	Tentatively identified compound. Identified as a result of a library search using the EPA/NIH Mass Spectral Library. Authentic standards were not available to properly identify and quantitate the compound. The reported concentration is an estimate.
TD =	Spike recovery too dilute for accurate quantitation.
UJ =	Not detected. Quantitation limit is estimated.
UL =	Not detected. Quantitation limit is probably higher.

Glossary:

FD2 =	Field duplicate sample; two environmental samples taken at the same time and place under identical conditions and treated identically in the field and laboratory.
FRB =	Field blank; a clean sample of the matrix of interest treated like a sample in the field and laboratory. (Exposed to sampling conditions)
LFM =	Laboratory fortified blank; a known increment of target analyte made to an aliquot of clean sample matrix. The LFM is treated like a sample in the laboratory.
LRB =	Laboratory reagent blank; an aliquot of reagent water or clean sample matrix treated like a sample in the laboratory.
MS/MSD=	Matrix spike/matrix spike duplicate; a known increment of target analyte made to a sample before preparation or analysis.
MSA =	Method of Standard Additions
RIN =	Equipment/rinsate blank collected in the field to check the cleanliness of sampling devices.
RPD =	Relative Percent Difference; the results for duplicate analyses are presented as the mean and the relative percent difference.

$$RPD = \frac{|Replicate1 - Replicate2|}{(Replicate1 + Replicate2)/2} \times 100$$

SAM =	Sample; a portion of the whole or a single item of a group that is representative of the environmental properties conditions of interest,
TRP =	Trip blank; a clean sample of the matrix of interest that is carried to the sampling site and transported to the laboratory for analysis without being exposed to sampling conditions.
( ) =	Numbers in parentheses are analytical spike recoveries (e.g. post-digestion spikes).
[ ] =	Numbers in brackets are matrix spike recoveries (e.g. pre-digestion spikes).

(08/03/94)

U.S. EPA Region III
Central Regional Laboratory
Annapolis, Maryland

Environmental Services Division

INORGANIC ANALYTICAL REPORT

BOARHEAD FARMS
SUPERFUND REMOVAL/REMEDIAL Acct # TFA03N9Y2
Lab Request No. REQ94128

Signature
Inorganic Review: Section Chief Joseph R. Dorsey 11 13 194 (date)

U.S. EPA Region III
Central Regional Laboratory
Annapolis, Maryland

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Facility: BOARHEAD FARMS
Program: SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ94128
Account #: TFA03N9Y2

INORGANIC ANALYTICAL SAMPLE RESULTS

Analytes:

Sample Number/Units:

	94091529 SAM			94091530 SAM			94091531 SAM		
IN-CHEMICAL	mg/L	%REC	RPD	mg/L	%REC	RPD	mg/L	%REC	RPD
Cyanide	< 0.02	[107]	D	< 0.02	(108)		< 0.02		
METALS	ug/L	%REC	RPD	ug/L	%REC	RPD	ug/L	%REC	RPD
Aluminum	<200	[100]		<200		D	<200	(98)	
Antimony	<10	[103]		<10	(95)	D	<10	(96)	
Arsenic	<2	[98]		<2	(104)	D	<2	(108)	
Barium	209	[100]		212		5	220	(100)	
Beryllium	<5	[99]		<5		D	<5	(99)	
Cadmium	<5	[100]		<5		D	<5	(99)	
Calcium	41400	[85]		41200		2	42200	(99)	
Chromium	<10	[101]		<10		D	<10	(98)	
Cobalt	<50	[95]		<50		D	<50	(98)	
Copper	<25	[99]		<25		D	<25	(99)	
Iron	1250	[84]		1090		0	1020	(99)	
Lead	<2	[109]		<2	(111)	D	<2	(112)	
Magnesium	17400	[93]		17200		1	17800	(98)	
Manganese	32	[100]		33		6	30	(97)	
Mercury	< 0.2	[104]	D	< 0.2			< 0.2		
Nickel	<40	[97]		<40		D	<40	(96)	
Potassium	1560	[94]		1230		9	1530	(100)	
Selenium	<5	[104]		<5	(99)	D	<5	(104)	
Silver	<10	[97]		<10		D	<10	(95)	
Sodium	12600	[94]		12400		2	13200	(99)	
Thallium	<5	[108]		<5	(115)	D	<5	(114)	
Vanadium	<50	[93]		<50		D	<50	(100)	
Zinc	24	[97]		26		6	<20	(100)	

MERCURY DETERMINATIONS

Analyst:

Melanie T. Wilkerson
Chemist/Lockheed

TID #: 03941044

Method:

Samples 940915-29 through 940915-31 from Boarhead Farms were analyzed for total mercury using EPA Method 245.1[1].

[1]Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020.

TOTAL CYANIDE DETERMINATIONS

Analyst:

Anna Wuerfel
Chemist/Lockheed

TID #:

03941042

Method:

Samples 940915-29 through 940915-31 from Boarhead Farms were analyzed for total cyanide using EPA Method 335.4.

METALS DETERMINATIONS

Analysts:

R.T. McClain, Lockheed Chemist
J.L. Molnar, Lockheed Chemist
M.J. Chang, Lockheed Chemist

Methods:

Samples 940915-29 through 940915-31 from Boarhead Farms were prepared for analysis by acid digestion and analyzed by furnace atomic absorption spectroscopy and inductively coupled plasma optical emission spectrometry. The following are the digestion and analytical techniques and methods employed:

Digestion Methods

Method from CLP SOW 9/91 revision, p. D-5, A.1. for Furnace AAS (excluding antimony)
Method from CLP SOW 9/91 revision, p. D-5, A.2. for ICP-AES, Flame AAS, and antimony by Furnace AAS

Analytical Methods

EPA Method 204.2 and Internal SOP R3-QA132, antimony by Furnace AAS (1)
EPA Method 206.2 and Internal SOP R3-QA132, arsenic by Furnace AAS (1)
EPA Method 239.2 and Internal SOP R3-QA132, lead by Furnace AAS (1)
EPA Method 270.2 and Internal SOP R3-QA132, selenium by Furnace AAS (1)
EPA Method 279.2 and Internal SOP R3-QA132, thallium by Furnace AAS (1)
EPA Method 200.7 and Internal SOP R3-QA132, remaining elements by ICP-AES (1)

(1) 1979/83 EPA Manual of Methods for Chemical Analysis of Water and Wastes

Quality Control:

Samples analyzed in duplicate (method duplicates) are reported as the Mean and the Relative Percent Difference (RPD) of the two analytical values. Routine Quality Control (QC) performed includes preparation and analysis of audit materials; check standards; interference check samples (ICS--for ICP-AES only); method blanks; method spikes; analytical spikes; method duplicates; and analytical duplicates. Calibration standards for ICP-AES are prepared from NIST stock solutions. Calibration standards for Furnace AAS are prepared from Baker stock solutions. Method blanks are prepared with each analytical set and are acceptable if they are found to be below the quantification level for the sample set. Audit materials are analyzed at the beginning of each run to document proper instrument calibration. For ICP-AES the acceptable range is 90-110% recovery; for other techniques it is the 95% confidence interval generated using the True Values and algorithms from EMSL-Cincinnati. Check standards are analyzed periodically (generally a 1/10 frequency) throughout the run to document instrumental stability, and are acceptable at 90-110%. The ICS is obtained from EMSL-Las Vegas and is analyzed at the beginning of each ICP-AES run to document proper selection of analytical lines, background correction factors, and interelement correction factors; it is acceptable at 80-120% recovery. The remaining QC items are sample specific and are performed at a frequency of 1/10 samples for sample sets $\geq$ 10 and 1 per sample set for sample sets <10, except for analytical spikes for Furnace AAS which requires a passing analytical spike or successful Method of Standard Additions for each sample. Acceptance limits for Precision (method and instrumental duplicates) are generated for each element/matrix/analytical procedure using a Shewhart Chart and the most recent 25 duplicate values. Acceptance limits for analytical spikes for Flame AAS and for ICP-AES are generated for 95% confidence intervals for each element/matrix/analytical procedure using the most recent 25 spike recoveries. Acceptance limits for analytical spikes for Furnace AAS are set at 85-115%. Acceptance limits for matrix spikes are 80-120% recovery; when matrix spikes fail an acceptable analytical spike must be prepared and analyzed.

U.S. EPA Region III
Central Regional Laboratory
Annapolis, Maryland

Environmental Services Division

ORGANIC ANALYTICAL REPORT

BOARHEAD FARMS
SUPERFUND REMOVAL/REMEDIAL Acct # TFA03N9Y2
Lab Request No. REQ94128

Signature
Organic Review: _____ 11/22/94
Section Chief (date)

U.S. EPA Region III
Central Regional Laboratory
Annapolis, Maryland

Facility: BOARHEAD FARMS
Program: SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ94128
Account #: TFA03N9Y2

ORGANIC ANALYTICAL SAMPLE RESULTS

Analytes:	Sample Number: 94091529 SAM	94091530 SAM	94091531 SAM	94091532 TRP
BNA				
NQL FACTOR:	1	1	1	
UNITS:	ug/L	ug/L	ug/L	
Bis(2-Chloroisopropyl)Ether	UJ	UJ	UJ	
1,3-Dichlorobenzene	2 J	2 J	3 J	
3,3'-Dichlorobenzidine	UJ	UJ		
VOA				
NQL FACTOR:	1	1	1	1
UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone			7 B	9.0
Bromodichloromethane	1 J	1 J	1 J	
Bromoform	5 J	5 J	5 J	
2-Chloroethylvinyl Ether	UJ	UJ	UJ	UJ
Chloroform	1 J	1 J	1 J	
Dibromochloromethane	4 J	4 J	4 J	
1,2-Dichloroethane			0.7 J	
Methylene Chloride	2 B	2 B	2 B	2 B
Naphthalene	1 B	2 B	1 B	0.7 J
ORGANICS				
NQL Factor:	1	1	1	
UNITS:	ug/L	ug/L	ug/L	

Facility: BOARHEAD FARMS
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ORGANIC QUALITY CONTROL (SURROGATE RECOVERIES)

Surrogates: | Sample Number: | Matrix: WATER

Surrogate	Limits (%)	94091529 SAM (%)	94091530 SAM (%)	94091531 SAM (%)	94091532 TRP (%)
BNA					
2-Fluoro-1,1'-Biphenyl	(43-116)	60	67	59	
2-Fluorophenol	(21-110)	70	87	78	
2,4,6-Tribromophenol	(10-123)	59	76	63	
d14-Terphenyl	(33-141)	61	73	77	
d5-Nitrobenzene	(35-114)	64	76	70	
d5-Phenol	(10-110)	70	88	80	
ORGANICS					
Decachlorobiphenyl	(60-150)	102	101	105	
Tetrachloro-M-Xylene	(60-150)	85	92	89	
VOA					
Bromofluorobenzene	(86-115)	101	100	97	96
d4-1,2-Dichloroethane	(76-114)	104	104	102	94
d8-Toluene	(88-110)	101	100	100	101

Facility: BOARHEAD FARMS
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ORGANIC Quality Control (Matrix Spike Recoveries)

Matrix Spike Recovery

Matrix: WATER

BNA Matrix Spike Recovery

Compound	Spike Recovery 94091529 MS (%)	Spike Recovery 94091529 MSD (%)	Recovery Limits (WATER) (%)	RPD (%)	RPD Limits (WATER) (%)
Acenaphthene	76	77	46-118	1	31
4-Chloro-3-Methylphenol	59	59	23-97	0	42
2-Chlorophenol	61	68	27-123	12	40
Di-n-Butylphthalate	78	76	11-117	3	40
1,4-Dichlorobenzene	56	64	36-97	9	28
2,4-Dinitrotoluene	71	73	24-96	2	38
N-Nitroso-di-n-Propylamine	52	55	41-116	6	38
4-Nitrophenol	70	73	10-80	5	50
Pentachlorophenol	36	42	9-103	16	50
Phenol	61	66	12-110	9	42
Pyrene	72	71	26-127	1	31
1,2,4-Trichlorobenzene	57	57	39-98	1	28

ORGANICS Matrix Spike Recovery

Compound	Spike Recovery 94091529 MS (%)	Spike Recovery 94091529 MSD (%)	Recovery Limits (WATER) (%)	RPD (%)	RPD Limits (WATER) (%)
Aldrin	92	95	40-120	3	22
4,4'-DDT	100	104	38-127	4	27
Dieldrin	100	104	52-126	3	18
Endrin	100	104	56-121	4	21
Gamma BHC (Lindane)	99	102	56-123	3	15
Heptachlor	97	100	40-131	3	20

VOA Matrix Spike Recovery

Compound	Spike Recovery 94091529 MS (%)	Spike Recovery 94091529 MSD (%)	Recovery Limits (WATER) (%)	RPD (%)	RPD Limits (WATER) (%)
Benzene	99	101	76-127	2	11
Chlorobenzene	106	106	75-130	0	13
1,1-Dichloroethene	104	108	61-145	3	14
Toluene	107	106	76-125	1	13
Trichloroethene	101	105	71-120	3	14

Central Regional Laboratory - Region III
Extractable Organics Analysis
Nominal Quantitation Limits (NQL)

Units: Water =ug/L NPTC =Non-Priority Pollutant Target Compound

Actual Quantitation Limit =(NQL Factor) X NQL

CAS	ANALYTE	NQL
62-75-9	N-Nitrosodimethylamine	10
108-95-2	Phenol	10
62-53-34	Aniline NPTC	10
111-44-4	bis(2-Chloroethyl)Ether	10
95-57-8	2-Chlorophenol	10
541-73-1	1,3-Dichlorobenzene	10
106-46-7	1,4-Dichlorobenzene	10
100-51-6	Benzyl Alcohol NPTC	10
95-50-1	1,2-Dichlorobenzene	10
95-48-7	2-Methylphenol NPTC	10
108-60-1	bis(2-chloroisopropyl)Ether	10
106-44-5	4-Methylphenol NPTC	10
621-64-7	N-Nitroso-di-n-Propylamine	10
67-72-1	Hexachloroethane	10
98-95-3	Nitrobenzene	10
78-59-1	Isophorone	10
88-75-5	2-Nitrophenol	10
105-67-9	2,4-Dimethylphenol	10
65-85-0	Benzoic Acid NPTC	50
111-91-1	bis(2-Chloroethoxy)Methane	10
120-83-2	2,4-Dichlorophenol	10
120-82-1	1,2,4-Trichlorobenzene	10
91-20-3	Naphthalene	10
106-47-8	4-Chloroaniline NPTC	10
87-68-3	Hexachlorobutadiene	10
59-50-7	4-Chloro-3-Methylphenol	10
91-57-6	2-Methylnaphthalene NPTC	10
77-47-4	Hexachlorocyclopentadiene	10
88-06-2	2,4,6-Trichlorophenol	10
95-95-4	2,4,5-Trichlorophenol NPTC	50
91-58-7	2-Chloronaphthalene	10
88-74-4	2-Nitroaniline NPTC	50
131-11-3	Dimethylphthalate	10
208-96-8	Acenaphthylene	10

CAS	ANALYTE	NQL
99-09-2	3-Nitroaniline NPTC	50
83-32-9	Acenaphthene	10
51-28-5	2, 4-Dinitrophenol	50
100-02-7	4-Nitrophenol	50
132-64-9	Dibenzofuran NPTC	10
606-20-2	2,6-Dinitrotoluene	10
121-14-2	2,4-Dinitrotoluene	10
84-66-2	Diethylphthalate	10
7005-72-3	4-Chlorophenylphenylether	10
86-73-7	Fluorene	10
100-01-6	4-Nitroaniline NPTC	50
86-30-6	N-Nitrosodiphenylamine(1)	10
534-52-1	4,6-Dinitro-2-Methylphenol	50
101-55-3	4-Bromophenylphenylether	10
118-74-1	Hexachlorobenzene	10
87-86-5	Pentachlorophenol	50
85-01-8	Phenanthrene	10
120-12-7	Anthracene	10
86-74-8	Carbazole NPTC	10
84-74-2	Di-n-Butylphthalate	10
206-44-0	Fluoranthene	10
92-87-5	Benzidine	50
129-00-0	Pyrene	10
85-68-7	Butylbenzylphthalate	10
91-94-1	3,3'-Dichlorobenzidine	20
56-55-3	Benzo(a)Anthracene	10
117-81-7	bis(2-Ethylhexyl)Phthalate	10
218-01-9	Chrysene	10
117-84-0	Di-n-Octylphthalate	10
205-99-2	Benzo(b)Fluoranthene	10
207-08-9	Benzo(k)Fluoranthene	10
50-32-8	Benzo(a)Pyrene	10
193-39-5	Indeno(1,2,3-cd)Pyrene	10
53-70-3	Dibenzo(a,h)Anthracene	10
191-24-23	Benzo (g,h,i)Perylene	10

The "Nominal Quantitation Limit" factor is an overall correction factor applied to the method's NQL's for analytical adjustments made during the analysis (i.e., for extractions of more or less than the ideal 30 grams for soil samples, for sample extracts not concentrated to 1.00 ml due to excessive foaming/darkness of the extract, and for sample extract dilutions prior to analysis). For example, the typical NQL factor for a CRL soil sample is 1.5. Therefore, the estimated Actual Quantitation Limit for Phenol would be 0.50 mg/Kg (i.e., 1.5 x .33 mg/Kg).

(1) Cannot be separated from diphenylamine.

Central Regional Laboratory - Region III
Pesticide and PCB Analysis
Nominal Quantitation Limits (NQL)

Units: Water =ug/L NPTC =Non-Priority Pollutant Target Compound

Actual Quantitation Limit =(NQL Factor) X NQL

CAS Number	Pesticide	NQL
319-84-6	Alpha-BHC	0.05
319-85-7	Beta-BHC	0.05
319-86-8	Delta-BHC	0.05
58-89-8	Gamma-BHC	0.05
76-44-8	Heptachlor	0.05
309-00-2	Aldrin	0.05
1024-57-3	Heptachlor Epoxide	0.05
959-98-8	Endosulfan I	0.05
60-57-1	Dieldrin	0.10
72-55-9	4,4'-DDE	0.10
72-20-8	Endrin	0.10
33213-65-9	Endosulfan II	0.10
72-54-8	4,4'-DDD	0.10
1031-07-8	Endosulfan Sulfate	0.10
50-29-3	4,4'-DDT	0.10
7421-93-4	Endrin Aldehyde	0.10
53494-70-5	Endrin Ketone (NPTC)	0.10
72-43-5	Methoxychlor (NPTC)	0.05
5103-71-9	Alpha-Chlordane	0.05
5103-74-2	Gamma-Chlordane	0.05
57-74-9	Chlordane	1.0
8001-35-2	Toxaphene	5.0

CAS Number	PCB	NQL
12674-11-2	Aroclor-1016	1.0
1104-28-2	Aroclor-1221	2.0
11141-16-5	Aroclor-1232	1.0
53469-21-9	Aroclor-1242	1.0
12672-29-6	Aroclor-1248	1.0
11097-69-1	Aroclor-1254	1.0
11096-82-5	Aroclor-1260	1.0

The "Nominal Quantitation Limit" listed for each target compound is based on the Superfund CLP Protocol. The Actual Quantitation Limits are related to the NQLs by the NQL Factor. This NQL Factor reflects procedural steps, e.g., extract dilution, which influence quantitation limits.

Central Regional Laboratory - Region III
Volatile Organics Analysis
Nominal Quantitation Limits (NQL)

Units: Water =ug/L NPTC =Non-Priority Pollutant Target Compound

Actual Quantitation Limit =(NQL Factor) X NQL

CAS #	ANALYTE		NQL
75-71-8	Dichlorodifluoromethane		5
74-87-3	Chloromethane		5
75-01-4	Vinyl Chloride		5
74-83-9	Bromomethane		5
75-00-3	Chloroethane		5
75-69-4	Trichlorofluoromethane		5
75-35-4	1,1-Dichloroethylene		5
75-15-0	Carbon Disulfide	NPTC	5
67-64-1	Acetone	NPTC	5
75-09-2	Methylene Chloride		5
156-60-5	trans-1,2-Dichloroethene		5
75-34-3	1,1-Dichloroethane		5
108-05-4	Vinyl Acetate	NPTC	5
590-20-7	2,2-Dichloropropane		5
156-59-4	cis-1,2-Dichloroethene	NPTC	5
78-93-3	2-Butanone	NPTC	5
74-97-5	Bromochloromethane	NPTC	5
65-66-3	Chloroform		5
71-55-6	1,1,1-Trichloroethane		5
56-23-5	Carbon Tetrachloride		5
563-58-6	1,1-Dichlo-1-propene		5
71-43-2	Benzene		5
107-06-2	1,2-Dichloroethane		5
79-01-6	Trichloroethylene		5
78-87-5	1,2-Dichloropropane		5
74-95-3	Dibromomethane	NPTC	5
75-27-4	Bromodichloromethane		5
110-75-8	2-Chloroethylvinyl ether		5
10061-01-6	trans-1,3-Dichloropropene	NPTC	5
108-10-1	4-Methyl-2-pentanone	NPTC	5
108-83-3	Toluene		5
10061-01-5	cis-1,3-Dichloropropene		5
79-00-5	1,1,2-Trichloroethane		5
127-18-4	Tetrachloroethylene		5

CAS #	ANALYTE		NQL
142-28-9	1,3-Dichloropropane	NPTC	5
591-78-6	2-Hexanone	NPTC	5
124-48-1	Dibromochloromethane		5
106-93-4	1,2-Dibromoethane(EDB)	NPTC	5
108-90-7	Chlorobenzene		5
630-20-6	1,1,1,2-Tetrachloroethane	NPTC	5
100-41-4	Ethylbenzene		5
108-38-3	m-Xylene)(m & p isomers	NPTC	5
106-42-3	p-Xylene together)	NPTC	5
95-47-6	o-Xylene	NPTC	5
100-42-5	Styrene	NPTC	5
75-25-2	Bromoform		5
98-82-81	Isopropylbenzene	NPTC	5
108-86-1	Bromobenzene	NPTC	5
79-34-5	1,1,2,2-Tetrachloroethane		5
96-18-4	1,2,3-Trichloropropane		5
103-65-1	n-Propylbenzene	NPTC	5
95-49-8	2-Chlorotoluene	NPTC	5
106-43-4	4-Chlorotoluene	NPTC	5
108-67-8	1,3,5-Trimethylbenzene	NPTC	5
98-06-6	tert-Butylbenzene	NPTC	5
93-63-6	1,2,4-Trimethylbenzene	NPTC	5
135-98-8	sec-Butylbenzene	NPTC	5
541-73-1	1,3-Dichlorobenzene		5
106-46-7	1,4-Dichlorobenzene		5
99-87-6	p-Isopropyltoluene	NPTC	5
95-50-1	1,2-Dichlorobenzene		5
104-51-8	n-Butylbenzene	NPTC	5
96-12-8	1,2-Dibromo-3-chloropropane		5
120-82-1	1,2,4-Trichlorobenzene		5
91-20-3	Naphthalene		5
87-68-3	Hexachlorobutadiene		5
87-61-6	1,2,3-Trichlorobenzene	NPTC	5

The "Nominal Quantitation Limit" factor is an overall correction factor applied to the method's NQLs for analytical adjustments made during the analysis (i.e., for analyses of more or less than the ideal 5 grams for soil samples, and for sample dilutions prior to analysis). For example, if the NQL factor for a CRL water sample is 2, the estimated Actual Quantitation Limit for vinyl chloride would be 10 ug/L (i.e., 2 x 5 ug/L).

Facility: BOARHEAD FARMS
Program : SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ94128
Account #: TFA03N9Y2

LRB RESULTS REPORT

Service Group : BNA

Instrument Run: OI94A151

Control Type	Event Number
LRB	6

Analyte	Correction Factor	Final Result	Units
2-Fluorophenol	1	79	% REC
d5-Phenol	1	80	% REC
d5-Nitrobenzene	1	72	% REC
2-Fluoro-1,1'-Biphenyl	1	65	% REC
2,4,6-Tribromophenol	1	67	% REC
d14-Terphenyl	1	73	% REC
Bis(2-Chloroisopropyl)Ether	1	UJ	ug/L
3,3'-Dichlorobenzidine	1	UJ	ug/L

Facility: BOARHEAD FARMS
Program : SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ941[redacted]
Account #: TFA03N9Y2

LRB RESULTS REPORT

Service Group : ORGANICS

Instrument Run: OC941014

Control Type	Event Number
LRB	1

Analyte	Correction Factor	Final Result	Units
Tetrachloro-M-Xylene	1	84	% REC
Decachlorobiphenyl	1	91	% REC

Facility: BOARHEAD FARMS
Program : SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ94128
Account #: TFA03N9Y2

LRB RESULTS REPORT

Service Group : VOA

Instrument Run: OH94A03B

Control Type	Event Number
LRB	1

Analyte	Correction Factor	Final Result	Units
d4-1,2-Dichloroethane	1	103	% REC
d8-Toluene	1	100	% REC
Bromofluorobenzene	1	97	% REC
Methylene Chloride	1	1 J	ug/L
2-Chloroethylvinyl Ether	1	UJ	ug/L

VOA ANALYSIS BY GC/MS

Analyst:

Sue Raupuk
Chemist/Lockheed

TID #: 03941043

Method:

Four (4) aqueous samples from Boarhead Farms were analyzed for the presence of volatile organic compounds amenable to purge and trap and identifiable by mass spectrometry. Samples were collected on September 14, 1994 and analyzed on September 19, 1994 following SOP #R3-QA210. This SOP is derived from the Superfund Contract Laboratory Program Statement of Work and from RCRA methodology (SW-846). Instrumentation utilized consisted of a purge and trap apparatus (Tekmar ALS 2016/LSC 2000) interfaced to a gas chromatograph/mass spectrometer (HP 5890/HP 5970) equipped with a fused silica capillary column (VOCOL 105m x 0.53mm ID x 3.0um film thickness). Concentrations of compounds were determined using the relative response of authentic standards to the closest internal standard. Only detected results are reported. Sample target compound values less than the quantitation limit were labeled with a "J". This indicates that the mass spectrum obtained for the sample met the identification criteria, yet the quantity present was below the level for which the instrument accurately quantitates. All results qualified with a "J" are estimated quantities.

The samples were also examined for the presence of compounds in addition to those on the Target Compound list. Authentic standards were not available to verify these tentatively identified compound (TIC) results. Tentative identification of these compounds was made on the comparison of sample spectra to the EPA/NBS54K Mass Spectral Library. Concentrations for these compounds were estimated based on the response of the closest internal standard and the assumption that the instrument response for a given tentative compound was the same as the instrument response for the internal standards. These identifications have been reported as tentative identifications with the associated quantitation values reported as estimated concentrations and qualified with a "T".

All samples analyzed, except sample number 940915-31, were found unpreserved at the analytical bench, however all samples were analyzed within the unpreserved holding time.

Quality Control:

Before acquisition of any sample data, the mass spectrometer is calibrated using FC43. The calibration is verified by obtaining the spectrum of a known compound (BFB). All mass assignments and relative abundances are found to be in acceptable ranges or the instrument is adjusted until an acceptable spectrum of the known is obtained. All samples and related Q.C. were analyzed within the twelve hour BFB time criteria.

Immediately before analysis, each sample is spiked with internal standards obtained from Supelco, Inc. All quantitations or estimates of concentrations are made in comparison to the internal standard nearest to the compound of interest.

The initial calibration consisted of a five-point calibration curve (5, 10, 50, 100 and 200 ug/L standards). Five (5) milliliters of aqueous sample were purged. The daily calibration check standard was analyzed at a concentration of 50.0 ppb.

For each day of sample analysis, a method blank (lab reagent blank - LRB) was prepared and examined for laboratory introduced contamination. All compounds which were found in both a LRB, trip and a sample were qualified "B" if the concentration of the compound in the sample was less than ten times (<10X) the compound's concentration in the blank.

The percent relative standard deviation (%RSD) for all compounds except 2-chloroethylvinylether in the initial calibration of the instrument on September 15, 1994 was below thirty (30) percent. The percent difference (%D) for all compounds except 2-chloroethylvinylether in the continuing calibration standard on September 19, 1994 was below twenty-five (25) percent when comparing the daily calibration standard to the initial calibration curve. These compounds are qualified "J", estimated, for the positive results and "UJ", undetected estimated, for non-detected results in the affected samples.

The samples were spiked with a mixture of surrogate compounds prior to analysis. Recovery for each was determined to check for matrix interferences. The target limits are those established by the CLP. All surrogate recoveries were within acceptable recovery limits.

Two (2) aliquots of aqueous sample 940915-29 were spiked with 5 ul of the matrix spike mix containing all spike compounds at a concentration of 50 ppb. The recovery for each compound was determined to check for matrix effect. Recoveries have been corrected for target compounds present in the sample. The target limits are those established by the CLP. All MS/MSD recoveries and RPDs were within CLP target limits.

TENTATIVELY IDENTIFIED COMPOUNDS

Site: Boarhead Farms
Program: Superfund Removal/Remedial

SAMPLE NO.	CAS #	TIC NAME	SCAN	CONC.(ug/L)
940915-29		Unknown, m/z = 73	2580	7 T

SAMPLE NO.	CAS #	TIC NAME	SCAN	CONC.(ug/L)
940915-30		None Detected		

SAMPLE NO.	CAS #	TIC NAME	SCAN	CONC.(ug/L)
940915-31		None Detected		

SAMPLE NO.	CAS #	TIC NAME	SCAN	CONC.(ug/L)
940915-32		Unknown, m/z = 73	2577	7 T

GC/MS EXTRACTABLE ANALYSIS

Analyst:

Hoang Nguyen
Chemist/Lockheed

TID #: 03941040

Method :

The three (3) aqueous samples from the Boarhead Farms site were analyzed for the presence of organic compounds listed as extractable Priority Pollutants and CLP Hazardous Substances List Compounds. The samples were collected on September 14, 1994. These samples were extracted by the continuous liquid-liquid extraction method at a pH<2 on September 15, 1994 and were analyzed on October 05 and 06, 1994 following SOP# R3-QA211.0. This SOP is a consolidated method derived from the Superfund Contract Laboratory Program Statement of Work and from RCRA methodology (SW-846). Instrumentation utilized consisted of a Hewlett Packard (HP) 5970 MSD coupled to a HP 5890 Series II gas chromatograph equipped with an HP-7673A auto-sampler and SPB-5 30 meter capillary column. Concentrations of compounds were determined using the relative response of authentic standards to the closest internal standard. These values have been reported in the RLIMS Final Report. Only those compounds for which results are reported were detected. Sample target compound values less than the quantitation limit were labeled with a "J". This indicates that the mass spectra obtained for the sample met the identification criteria, yet the quantity present was below the level for which the instrument accurately quantitates. These results, qualified with a "J", should be considered estimated quantities.

The samples were also examined for the presence of compounds in addition to those on the Target Compound list. Authentic standards were not available to verify these tentatively identified compounds (TIC) results. Tentative identification of these compounds was made by the comparison of sample spectra to the EPA/NBS54K Mass Spectral Library. Concentrations for these compounds were estimated based on the response of the closest internal standard and the assumption that the instrument response for a given tentative compound was the same as the instrument response for the internal standards. These identifications have been reported as tentative identifications with the associated quantitation values reported as estimated concentrations and qualified with a "T". The TICs in all sample extracts have been corrected for any blank contamination.

Quality Control:

Before acquisition of any sample data, the mass spectrometer is calibrated using FC43. The calibration is verified by obtaining the spectrum of a known compound (DFTPP). All mass assignments and relative abundances are found to be in acceptable ranges or the instrument is adjusted until an acceptable spectrum of the known is obtained.

Immediately before analysis, each sample is spiked with an internal standard mix from Supelco, Inc. containing D4-1,4-dichlorobenzene, D8-naphthalene, D10-acenaphthene, D10-phenanthrene, D12-chrysene and D12-perylene. All quantitations or estimates of concentration are made in comparison to the internal standard nearest to the compound of interest.

Quantitation was based on the 50 ng/ul standard, and the initial calibration consisted of a five (5) point calibration (10, 20, 50, 80 and 100 ng/ul) except for 4-nitroaniline which consisted of a four (4) point calibration (20, 50, 80 and 100 ng/ul). The percent relative standard deviation (%RSD) for all compounds in the initial calibration of the instrument on October 03, 1994 was below thirty (30) percent. The percent difference (%D) for all compounds except for bis(2-chloroisopropyl)ether and 3,3'-dichlorobenzidine in the continuing calibration check standard on October 05, 1994 and except for bis(2-chloroisopropyl)ether in the continuing calibration check standard on October 06, 1994 was below twenty-five (25) percent when comparing the daily calibration standard to the initial calibration curve. These compounds are qualified "J", estimated, for the positive results and "UJ", undetected estimated, for non-detected results in the affected samples.

For each group of samples extracted, a method blank is prepared and examined for laboratory introduced contamination. Only target compounds in the samples with values less than or equal to ten times (<10) the method blank, field blank, rinsate blank and/or equipment blank are reported with a "B" qualifier.

The samples were spiked with a mixture of six surrogate compounds prior to extraction. Recovery for each was determined to check for matrix effect. All surrogate recoveries were within Q.C. limits. The target limits are those established for the CLP.

Two (2) aliquots of sample 940915-29 were spiked with a priority pollutant cocktail mix containing twelve compounds at 100 ng/uL for acid and 50 ng/uL for base/neutral (in the extract) and carried through the extraction and GC/MS. All matrix spike recoveries and all %RPDs were within acceptable limits for the aqueous matrix.

TENTATIVELY IDENTIFIED COMPOUNDS

Site: Boarhead Farms
Program: Superfund-Removal/Remedial

UNITS: ug/L

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
940915-29		None Detected		

UNITS: ug/L

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
940915-30		None Detected		

UNITS: ug/L

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
940915-31		None Detected		

PCB/PESTICIDE ANALYSIS BY GC

Analyst:

Sybil L. Lucas
Chemist/Lockheed

Method:

The samples from Boarhead Farms were analyzed by capillary column gas chromatography for polychlorinated biphenyls and organochlorine pesticides listed on the priority pollutants compound list. The samples were collected on September 14, 1994. The extractions of the samples were performed on September 15, 1994. One liter of each aqueous sample was extracted between eighteen and twenty-four hours with methylene chloride by continuous liquid-liquid extraction. Each extract was subsequently reduced to 10 mL in hexane using Kuderna-Danish flasks. All extractions and analyses were performed according to SOP R3-QA207.0. This SOP is a consolidated method derived from the Superfund CLP Statement of Work.

Analysis of all sample extracts began on October 3, 1994 and continued until October 5, 1994. All sample extracts were analyzed on a Hewlett-Packard 5890 gas chromatograph (GC) equipped with an automatic injector and dual electron capture detectors (ECDs). All samples, standards, and laboratory control solutions were run on dual columns connected by an injector port tee. The fused silica capillary column connected to the front ECD was a J&W Scientific DB-608 (30 m., 0.53 mm ID). The fused silica capillary column connected to the rear ECD was a Restek Rtx-1701 (30 m., 0.53 mm ID). Data were obtained from these analyses using the Millennium data acquisition and processing software. Since both the front and rear columns were fully calibrated during analyses, the lower of the results from the two columns was used for reporting.

Identification of organochlorine pesticides was accomplished by comparing retention times of known pesticides with the peaks observed in the sample extract chromatograms. A retention time window of 1% of the retention time of the standard chromatogram was used for identification of target compounds. Identification of PCBs was accomplished by matching the profile of known PCBs with patterns exhibited in the target sample chromatograms. Quantitation of multi-responding compounds was based on the average of several calibrated peaks. The quantitation of all surrogate compounds and target analytes was based on a five-point linear regression where the correlation coefficient is greater than 0.995 for pesticides, and on a three-point linear regression where the correlation coefficient is greater than 0.995 for PCBs.

The NQLs (nominal quantitation limits) are the quantitation limits that have been determined for each compound analyzed by this method. The actual quantitation limit is the NQL multiplied by an NQL factor specific for each sample. The NQL factors for each sample are listed in the analytical data tables.

Quality Control:

The two fused silica capillary columns of the HP5890 Gas Chromatograph were calibrated with five levels of the certified pesticide standards. A breakdown check standard and a mid-level check standard were analyzed concurrent with sample analyses. To monitor instrument stability, each sample sequence was interspersed with mid-level check standards and ended with a mid-level check standard. If initial and/or continuing calibration check criteria are not satisfied for a particular analyte on one column, quantitation of that analyte will be performed using the other column (assuming valid linearity). If linearity cannot be achieved on either column, the problem will be addressed, and a new curve will be generated.

A representative standard or a three-point calibration for each Toxaphene and each PCB was analyzed at the beginning of the analytical sequence for pattern recognition or quantitation. The injection volume was 3 uL for the standards, samples, and quality control solutions. An automatic sampler (HP 7673A) was used for injection.

Continuing calibration criteria were monitored for target pesticides. All check standards met acceptance criteria for all compounds.

Surrogates tetrachloro-meta-xylene (TMX) and decachlorobiphenyl (DCBP) were added to all target samples and quality control samples. With each sample set, a laboratory blank and matrix spikes (in duplicate) are analyzed. An in-house performance audit is analyzed at least quarterly to assure satisfactory method performance. Recoveries and duplicate results are monitored to demonstrate acceptable system performance.

All of the six (6) sample surrogate recoveries were within the 60% - 150% advisory windows.

Due to difficulty with sample preparation, the blank spike (LFM) was inadvertently not spiked. Quality control acceptance was based on matrix spike and duplicate results.

All remaining recoveries for all spiked compounds were within advisory limits.

Enforcement

CHAIN OF CUSTODY RECORD

QUA- Met-8

Pri...

Central ...
939 Bestgate ...
Annapolis, MD ...

PROJ. NO.	PROJECT NAME
18 3642.0	BOTHEAD FARMS

SAMPLERS: (Signature) Mitch Bonnack / Lara Hill

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TAL CYANIDE	TAL METALS	VOA	REMARKS CASE # EPA TAG #'s
RT	9-14-94	0730		X	Rectangular Tank 29	3	X		94091529	3-1250980-82, (MS/MSD Volume), pH>12
RT		0730		X	Rectangular Tank 29	2		X	94091529	3-1250978-79, (MS/MSD Vol), pH<2
RT		0730		X	Rectangular Tank 29	6			X 94091529	3-1250968-73, (MS/MSD Vol) 3 x pH<2 3 x ICE ONLY
CT		0745		X	CYLINDRICAL TANK 30	1	X		94091530	3-1250989 pH>12
CT		0745		X	CYLINDRICAL TANK 30	1		X	94091530	3-1250988 pH<2
CT		0745		X	CYLINDRICAL TANK 30	2			X 94091530	3-1250983-84 1x pH<2 1x ICE ONLY
CT-DUP		0800		X	CYLINDRICAL TANK - Duplicate 31	1	X		94091531	3-1250996 pH>12
CT-DUP		0800		X	CYLINDRICAL TANK - DUPLICATE 31	1		X	94091531	3-1250995 pH<2
CT-DUP		0800		X	CYLINDRICAL TANK - DUPLICATE 31	2			X 94091531	3-1250991-92 1x pH<2 1x ICE ONLY
TB	↓	0810		X	TRIP BLANK 32	2			X 94091532	3-1250997-98 1x ICE ONLY 1x pH<2 NO TIME

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Mitch Bonnack	9-14-94 1445				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		Jamie Jones	9/15/94 9:45	NOTE COOLER RETURN PAPERWORK COOLER # 2 OF 2 FED X # 066316292O	

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AR305304

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Philadelphia, Pennsylvania 19107

M

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
183LY2.0	BOARHEAD FARMS

SAMPLERS: (Signature)
Mitch Barnes / Chuck Hunn

Central Regional Laboratory
839 Bestgate Rd
Annapolis, MD 21401-3013

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	BNA/PEST/PCB							REMARKS CASE # EPA TAG #'s
RT	9-14-94	0730		X	Rectangular Tank 29	4	X		9409	1529				3-1250984-87 ICE ONLY (MS/MSD Volume)
~~RT~~					~~Rectangular Tank~~	~~1~~	~~X~~ (MS/MSD)							
~~RT~~					~~Rectangular Tank~~	~~1~~	~~X~~ (MS/MSD)							
~~RT~~					~~Rectangular Tank~~	~~2~~	~~X~~ (MS/MSD)							
CT	9-14-94	0745		X	Cylindrical Tank 30	2	X		9409	1530				3-1250985-86 ICE ONLY
~~CT~~					~~Cylindrical Tank~~	~~1~~	~~X~~ (MS/MSD)							
CT-DUP	9-14-94	0800		X	Cylindrical Tank - Duplicate FD2	2	X		9409	1531				3-1250993-94 ICE ONLY
~~CT-DUP~~					~~Cylindrical Tank - Duplicate~~	~~1~~	~~X~~ (MS/MSD)							no p.code, time or day

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Mitch Barnes	9-14-94 1745				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
			9/15/94 9:45	NOTE COOLER RETURN PAPERWORK COOLER # 1 OF 2 FEDX # 0663162916 (GOVT)	

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Region III, Central Regional Laboratory
Annapolis, Maryland

HAZARD AND RISK EXPOSURE DATA SHEET
LEVELS OF PERSONAL PROTECTION DURING SAMPLING

BACKGROUND

Under the authority of Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) of 1980, Section 311 of the Clea Water Act, and Subtitle I of the Resource Conservation and Recovery Act (RCRA), EPA ha been delegated the responsibility to undertake response actions with respect to the release or potential release of oil, petroleum, or hazardous substances that pose a substantial threat to human health or welfare, or the environment.

GENERAL

This form is to be used when collecting Environmental Samples (i.e. streams, farm ponds, wells, soils etc.) and for Hazardous Samples (i.e. drums, storage tanks, lagoons, leachates, hazardous waste sites). This information is intended for use as a guide for the safe handling of these laboratory samples in accordance with EPA and OSH regulations. The sample classification(s) and levels of personal protection used by the sampler in all situations will enable the analyst to be better aware of potential exposure to substances in air, splashes of liquids, or other direct contact with material due to work being done.

DEGREE OF PROTECTION

_____ Level A: Highest level of respiratory, skin, and eye protection needed. Fully encapsulated suit, respirator self-contained (Tank type)

_____ Level B: Highest level of respiratory protection but lesser level of skin protection needed. Chemical suit, respirator self-contained (Tank type)

_____ Level C: Lesser level of respiratory protection than Level B. Skin protection criteria are similar to Level B. Chemical suit, cannister respirator/cartridge

X Level D: Work uniform without any respirator or skin hazards. Lab coat, gloves etc.

CLASSIFIED FIELD SAMPLES

X Environmental ___Hazardous ___Comb. (Env. & Haz.) ___Radioactive

Site Name: BOARHEAD FARMS Sampling Date: 9-14-94

Sta No. RT, CT, CT-DUP, TB, _____, _____, _____, _____, _____, _____

Field pH: *, *, *, 7, _____, _____, _____, _____, _____, _____

(must be taken prior to submission of aqueous samples)

Sampler: MICHAEL BORKOWSKI Work Phone Number: 610-982-9634

Personal observations at time of sampling (surroundings): NOTHING UNUSUAL

Sample collection observations (physical sample, odors etc.) NOTHING UNUSUAL

* PLEASE SEE C-O-C FOR FIELD MEASUREMENTS

AR305306

Region III, Central Regional Laboratory
Annapolis, Maryland

HAZARD AND RISK EXPOSURE DATA SHEET
LEVELS OF PERSONAL PROTECTION DURING SAMPLING

BACKGROUND

Under the authority of Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) of 1980, Section 311 of the Clean Water Act, and Subtitle I of the Resource Conservation and Recovery Act (RCRA), EPA has been delegated the responsibility to undertake response actions with respect to the release or potential release of oil, petroleum, or hazardous substances that pose a substantial threat to human health or welfare, or the environment.

GENERAL

This form is to be used when collecting Environmental Samples (i.e. streams, farm ponds, wells, soils etc.) and for Hazardous Samples (i.e. drums, storage tanks, lagoons, leachates, hazardous waste sites). This information is intended for use as a guide for the safe handling of these laboratory samples in accordance with EPA and OSHA regulations. The sample classification(s) and levels of personal protection used by the sampler in all situations will enable the analyst to be better aware of potential exposure to substances in air, splashes of liquids, or other direct contact with material due to work being done.

DEGREE OF PROTECTION

____ Level A: Highest level of respiratory, skin, and eye protection needed.
Fully encapsulated suit, respirator self-contained (Tank type)

____ Level B: Highest level of respiratory protection but lesser level of skin protection needed.
Chemical suit, respirator self-contained (Tank type)

____ Level C: Lesser level of respiratory protection than Level B. Skin protection criteria are similar to Level B.
Chemical suit, cannister respirator/cartridge

X Level D: Work uniform without any respirator or skin hazards.
Lab coat, gloves etc.

CLASSIFIED FIELD SAMPLES

X Environmental ___ Hazardous ___ Comb. (Env. & Haz.) ___ Radioactive

Site Name: BOARDHEAD FARMS Sampling Date: 9-14-94

Sta No. RT, CT, CFAP, ____, ____, ____, ____, ____, ____, ____
Field pH: 7, 7, 7, ____, ____, ____, ____, ____, ____, ____
(must be taken prior to submission of aqueous samples)

Sampler: MARK BORMACK Work Phone Number: 610-982-9630

Personal observations at time of sampling (surroundings):

NOTHING UNUSUAL

Sample collection observations (physical sample, odors etc.)

NOTHING UNUSUAL